

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

Petition of the Wisconsin Department of Transportation for a Determination of the Adequacy of Warning Devices at the Grade Crossing of the Union Pacific Railroad Co. Tracks with STH 32 (Union Avenue) in the Village of Cedar Grove, Sheboygan County

9040-RX-1180

FINDINGS OF FACT AND ORDER

By letter dated March 2, 2004, the Wisconsin Department of Transportation (DOT) filed a petition with the Office of the Commissioner of Railroads (OCR) for a determination under §195.28, Stats., of the adequacy of warning devices at the grade crossing of the Union Pacific Railroad Co. (UP) tracks with STH 32 (Union Avenue) in the Village of Cedar Grove, Sheboygan County (Crossing No. 180 176E / MP 136.14).

Findings of Fact

THE COMMISSIONER FINDS:

STH 32 (Union Avenue) has two 12'-wide travel lanes and 10'-wide parking lanes (total width of 44'). STH 32 (Union Avenue) intersects the railroad tracks at an angle of 77° measured. The roadway STH 32 (Union Avenue) carries an average daily traffic (ADT) of 2400. DOT projects the roadway will carry 3070 ADT in 2026. The legal speed limit is 30 mph.

The UP operates 4 train movements per day over the crossing at a timetable speed of 40 mph. The crossing consists of one mainline track.

A motorist traveling at 30 mph requires a safe stopping distance of 231'. The crossing is visible from more than 500' in each direction. Assuming a train speed of 40 mph, a motorist traveling at 30 mph needs to see a train when it is 405' from the crossing from a point 231' down the highway. The sight distance available in each quadrant from the safe stopping distance is as follows: 50' northwest quadrant, 275' northeast quadrant, 100' southwest quadrant and 220' southeast quadrant. Sight distance is inadequate in all quadrants.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the STH 32 (Union Avenue) crossing is 895'. The available clearing sight distance is less than 895' in the southeast and southwest quadrants.

The exposure factor at this crossing is 9600. The exposure factor at this crossing will exceed 12,000 in the design year assuming 4 train movements per day. The exposure factor equals the

product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

No train-vehicle accidents have occurred at this crossing since 1973.

Accidents that do occur here will likely be quite serious if a through train is involved due to their 40 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

The crossing is presently protected with non-walkout cantilevered 12" incandescent automatic flashing lights and motion detection circuitry. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety walk-out cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry are needed.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) are a relatively new application for crossing signals. The LED lamps replace the incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The signal materials and installation shall be paid from DOT funds as part of the STH 32 highway project.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of the Union Pacific Railroad Co. with STH 32 (Union Avenue) in the Village of Cedar Grove, Sheboygan County.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Union Pacific Railroad Co.** shall install and maintain cantilevered 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with STH 32 (Union Avenue) at-grade in the Village of Cedar Grove, Sheboygan County by **December 31, 2005** (Crossing No. 180 176E / 136.14).

2. That the **Union Pacific Railroad Co.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

4. That the **Union Pacific Railroad Co.** shall bear no part of the cost of the crossing signals installation, except for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.

5. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

6. That jurisdiction is retained.

Dated at Madison, Wisconsin, _____.

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads